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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/506,289 02/18/00 KYOGAKU

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EXAMINER

BERRY, R

ART UNIT

PAPER NUMBER

2818

DATE MAILED:

05/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/506,289

Applicant(s)

Kyogaku et al.

Examiner

Renee Berry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent no. 6,008,502 to Deguchi et al. in view of US patent no. 6,231,413 to Tsukamoto.

Deguchi teaches a method of making an electron-emitting device by disposing an electrically conductive member having a second gap on a substrate; and applying a voltage to the electrically conductive member while irradiating at least the second gap with an electron beam from electron emitting means disposed apart from the electrically conductive member in an atmosphere comprising a carbon compound (column 11, lines 8-12).

In regard to claim 2, Deguchi teaches a method of making an electron-emitting device by disposing first and second electrically conductive members on a substrate with a second gap interposed and applying a voltage to a first and second electrically conductive members while irradiating at least the second gap with an electron beam from electron emitting means disposed

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apart from the electrically conductive members in an atmosphere comprising a carbon compound (column 11, lines 8-12).

In regard to claim 3, Deguchi teaches a method of making an electron-emitting device by disposing an electrically conductive member having a second gap on a substrate; and irradiating at least the second gap with an electron beam from electron emitting means disposed apart from the electrically conductive member in an atmosphere comprising a carbon compound within a period where a voltage is applied to the electrically conductive member (column 16, lines 62 to column 17, lines 1-16).

In regard to claim 4, Deguchi teaches a method of making an electron-emitting device by disposing first and second electrically conductive members on a substrate with a second gap interposed and irradiating at least the second gap with an electron beam from electron emitting means disposed apart from the electrically conductive members in an atmosphere comprising a carbon compound within a period where a voltage is applied to a first and second electrically conductive members (column 12, lines 1-34).

In regard to claim 5, Deguchi teaches an electrically conductive member having a second gap electrically conductive film which connects a pair of electrodes to each other and has a second gap in a portion of the electrically conductive films (column 12, lines 35-48).

In regard to claim 6, Deguchi teaches electrically conductive members are a pair of electrodes which are disposed with a second gap (column 4, lines 56-58).

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In regard to claim 7, teaches electrically conductive film and a second electrically conductive film which are connected to a first and second electrodes apart disposed respectively and are disposed with a second gap interposed (column 12, lines 35-48).

In regard to claim 9, Deguchi teaches an electron beam is at an energy level not lower than 1 keV and not higher than 20 keV (column 6, lines 3-8).

In regard to claim 10, Deguchi teaches an electron source having a plurality of electron-emitting devices (column 18, lines 55-60/claim 1).

However, Deguchi does not teach the limitations of claims 8 and 11.

In regard to claim 8, Tsukamoto teaches an applied voltage is a pulse like voltage (column 32, lines 25-27, claim 8) .

In regard to claim 11, Tsukamoto teaches a method of forming an image-forming apparatus having an electron source and an image forming member (column 32, lines 43-52, claim 13)

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to have modified Deguchi to include applying voltage in a pulse like voltage and forming an image-forming apparatus having an electron source and an image forming member, since such a modification would result in improved and uniform electron emission, as described in column 2, lines 26-45 of Tsukamoto.

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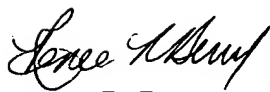
Response to Arguments

3. Applicant's arguments filed on March 12, 2001 have been fully considered but they are not persuasive. Applicant argues that the references do not teach an electron-emitting device. However, Tsukamoto teaches an electron-emitting device and an image-forming apparatus at column 32, lines 25-45.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renee R. Berry whose telephone number is (703) 305-4544.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached on (703) 308-4910. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724.


Renee R. Berry

March 21, 2001